



# ENDANGERED SPECIES TECHNICAL BULLETIN

Department of the Interior • U.S. Fish and Wildlife Service • Endangered Species Program, Washington, D.C. 20240

## Status Review Shows Mexican Duck Should Be Deregulated

A Service review of the Mexican duck's status has revealed information indicating the species is no longer Endangered or Threatened. Accordingly, the Service has proposed that *Anas diazi* be removed from the U.S. List of Endangered and Threatened Wildlife and Plants (F.R. 3/31/78).

The species' status has been complicated by hybridization with the mallard (*Anas platyrhynchos*) since the Mexican duck was first listed as an Endangered species under the Endangered Species Preservation Act of 1966. At that time available data suggested that interbreeding with the mallard and drainage of wetlands habitat, particularly along the Rio Grande in New Mexico and in northern Mexico, was threatening the Mexican duck's existence. It was surmised that the species was in similar stress throughout its range, which extends to southern Mexico.

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## Minnesota's Gray Wolf Population Reclassified to Threatened Status

Minnesota's wolf population has been reclassified from Endangered to Threatened and northern areas of the State, together with Isle Royale National Park, Michigan, have been designated as Critical Habitat for the species in a final rulemaking issued by the Service (F.R. 3/9/78).

All other wolves in the conterminous United States and in Mexico remain listed as Endangered.

The ruling, effective April 10, also simplifies and updates the listing system used under the Endangered Species Act of 1973. Subspecific names have been deleted and all gray wolves are listed as *Canis lupus*.

In addition, the ruling is accompanied by special regulations authorizing the taking of wolves that prey on legally present domestic animals in certain areas of Minnesota.

### Anticipated Effects

The Service considers the ruling "to accurately express the current status

of the gray wolf, based solely on the best available biological data." On a broad scale, the ruling is expected to provide all wolf populations south of Alaska and Canada (where wolves are plentiful) with full protection under the 1973 act, and to simplify law enforcement and conservation measures.

Specifically, in dealing with Minnesota's estimated 1,200 wolves (the only significant wolf population south of Canada), the Service anticipates that the ruling will help reduce the present conflict between wolf and human interests and will thereby provide for the wolf's future well-being.

### Comments on Proposal

The Service received many comments in response to the original proposal, published in the *Federal Register* on June 9, 1977 (see July 1977 BULLETIN). Respondents included numerous federal, state, and local agencies and officials, private organizations, and over 1,700 private citizens.

At the federal level, the National Park Service and the U.S. Forest Service voiced general support for the proposal. At the state level, 25 of the 26 state governors who responded either supported the proposal or expressed no opposition.

The Governor of Minnesota recommended that the wolf not be listed as either Endangered or Threatened in Minnesota, but that, if it was listed, certain adjustments should be made in the proposed Critical Habitat boundaries and in the depredation-control regulations. In addition, the Secretary of State of Minnesota sent the Service a copy of a state legislature resolution, approved by the Governor, calling for the complete declassification of the wolf in Minnesota. Similar views were voiced by various State and local officials and governmental units.

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U.S. Fish and Wildlife Service photo by Don Rimbach

A federally supported study is helping promote the survival of the Indiana bat in Missouri, one of the most important locations of this Endangered species. For details see the special state report on Missouri's endangered species program starting on page 4.



## Regional Briefs

The following summary of activities has been reported by the Endangered Species Program regional staffs:

**Region 1.** The Sierra Club has initiated a civil suit in hopes of forcing the State of Hawaii to eradicate feral sheep and goats from the mamane-naio forest habitat of the Endangered palila (*Psittirostra bailleui*). Elimination of the sheep and goats on lands owned by the State, which include the bird's last remaining habitat on the island of Hawaii, was recommended in a recently approved recovery plan for the palila (see February 1978 BULLETIN).

**Region 2.** In a section 7 consultation, the Service has pointed out some possible dangers to the Endangered humpback chub (*Gila cypha*) in a proposed National Park Service (NPS) plan that would alter the water temperature of the Colorado River in the Grand Canyon. The NPS has suggested that the Bureau of Reclamation place multiple penstocks in the Glen Canyon Dam reservoir to release warmer waters from its upper portion, raising the temperature of the nearly freezing water being released from the bottom

of the dam. If the water temperature is raised, the Service said it could invite the entry of such exotic species as the striped bass (*Morone saxatilis*) and an external copepod parasite (*Learnea* sp.), which cannot survive in cold water, to the detriment of the humpback chub. The Service has recommended that the NPS conduct studies to determine the benefits and problems with the proposed project, which is intended to enhance trout habitat in the river.

Potential negative biological effects on Endangered brown pelicans (*Pelecanus occidentalis*) and whooping cranes (*Grus americana*) at Aransas National Wildlife Refuge have been noted by the Service in a section 7 consultation with the National Marine Fisheries Service (NMFS) on a proposed deepwater oil terminal, called Sea Dock, off the Texas coast. The Service recommended the development of contingency plans to prevent possible oil spills from reaching the refuge and cleanup procedures, should they occur.

**Region 3.** An endangered species publications unit has been formed by the staff in cooperation with the Service's Twin Cities Public Affairs Office.

Materials published by the States in the region, other Service regional offices, and the Service's Washington Office of Public Affairs have been assembled by the unit to respond to public inquiries on Endangered and Threatened species.

**Region 4.** Studies were conducted by the Service in April on the possible effects of commercial aircraft operations on the Florida everglade kite (*Rosthamus sociabilis plumbeus*) in connection with the location of the Florida Replacement Jetport, a new training facility, in Dade County. A further study is planned in April or May at Barranquilla, Colombia, of the effect of jet operations on the snail kite. The Federal Aviation Administration, which requested the section 7 consultation, is participating in the studies. A biological opinion is expected to be issued by the Service in June.

**Region 5.** Two of the four breeding pairs of bald eagles (*Haliaeetus leucocephalus*) at the Service's Patuxent Wildlife Research Center have produced second egg clutches this year. The captive propagated eggs and/or the eaglets hatched from them will be used for additional transplants. Last year, two eaglets from Patuxent were released in the Montezuma National Wildlife Refuge in New York State and one eaglet was hatched from a total of three eggs placed in the nests of unproductive eagles in northern Virginia.

**Region 6.** A biological opinion has been prepared by the Service for the Bureau of Land Management in connection with a section 7 consultation on the Allen-Warner Valley Energy System in southwestern Utah. The opinion says the Harry-Allen Power Plant, a coal processing facility, should be carefully monitored for possible detrimental effects upon the moapa dace (*Moapa coriacea*), the woundfin (*Plagopterus argentissimus*), the bald eagle, and the peregrine falcon (*Falco peregrinus*) through emissions of mercury and arsenic. The same opinion noted that if the Warner Valley Water Project is carried out as planned, it would reduce the flow of the Virgin River and possibly jeopardize the woundfin. Minimum water levels essential to the species were specified in the opinion.

**Alaska Area Office.** One-day workshops have been held in Fairbanks and Anchorage to assist area Service personnel in gearing up for section 7 consultations. The Endangered Species Program staff also has been holding discussions on proposed listings of endangered and threatened plants in Alaska with Bureau of Land Management personnel and also with University of Alaska botanists.

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# Colorado Squawfish Restoration Plan Approved By Service



Captive Colorado River squawfish will play role in restocking program

U.S. Fish and Wildlife Service photo by Donald P. Toney

A recovery plan calling for a major effort to restore the Endangered Colorado squawfish (*Ptychocheilus lucius*)—also known as the “white salmon”—in its present and portions of its former range in the Colorado River basin has been approved by the Service.

The plan’s primary goal is to maintain self-sustaining populations of the fish in its native ecosystem where the species may be restored to the point where it can be reclassified to Threatened status, or delisted entirely.

The Colorado squawfish belongs to the minnow family, Cyprinidae, and is considered the largest minnow in North America. A maximum weight of more than 80 pounds and length of nearly six feet have been recorded. However, the recovery team said that specimens over 15 pounds have been rare in the past decade. Their huge pike-like bodies, upstream migratory habits, delicate flesh (the squawfish is a predator on other fish), and fighting behavior when hooked on a lure are the characteristics responsible for the “white salmon” sobriquet.

## Unique Adaptation

Once plentiful in the Colorado River and its tributaries, the squawfish is now believed to be extinct in the lower basin and to have declined drastically in the upper basin because of main-stream dams that have imposed radical changes on the rivers.

Before these changes took place, the Colorado was a savage river, drop-

ping more than two miles on its 1,700-mile course to the Gulf of California, and creating some of the most raging water found anywhere. The water itself was laden with mineral salts and choked with silt, giving it an unchanging color and its name—*Rio Colorado*, the great Red River of the West. The recovery team notes:

“Indeed, at one time the Colorado river was a harsh environment for any living thing, and the fish that evolved in its muddy, turbulent waters are unique. Some formed strangely modified backs i.e., humpback chub (*Gila sypha*) and razorback sucker (*Xyrauchen texanus*); while others developed thin caudal peduncles, tiny scales and large falcate fins, i.e. bonytail chub (*Gila elegans*); unique adaptations to a demanding environment. And sitting on top of the trophic pyramid, the top carnivore of the Colorado system, was the squawfish . . . [which] preyed at will on those other fishes, themselves so uniquely adapted to the Colorado river.”

Starting with the Hoover Dam in 1935, more than 20 other dams have been built in the Colorado River system. “Over much of its course, [the Colorado] has become a series of mill ponds, connected by clear, cold trout streams,” the recovery team said, adding: “Is it any wonder that those species, adapted to the *Rio Colorado*, find themselves strangely out of place in this newly created man-made environment?”

## Recovery Plan Steps

Investigators have had difficulty in determining the present distribution of the squawfish because of the isolated nature and high turbidity of the rivers they are known to inhabit. The recovery team cited studies indicating the species is present in Grand, Desolation, and Yampa canyons. The Yampa River, still largely in its natural state, appears to contain small numbers of not only the squawfish but the Endangered humpback chub, the rare bonytailed chub, and the razorback sucker.

In the recovery plan, the team recommends an extensive monitoring program to identify the squawfish’s existing habitat and additional studies to delineate the biological characteristics of its habitat. This information would be used to define Critical Habitat and to protect and improve habitats where feasible. In addition the plan sets forth a restocking program, and outlines steps for reintroduction of the fish in portions of its historic habitat through artificial propagation and stocking. Other elements of the plan include:

- Enforcement of laws to protect the fish’s present habitat from damage by industry and to protect the fish from being taken illegally.
- An extensive information and education program to make the public aware of the fish’s plight.
- Performance of basic studies on the fish’s life history, spawning requirements, food habits, population dynamics, and biological history.



## Missouri's 'Design For Conservation' Plan Is Broadening ES Protection; More Habitat Being Acquired



Moles Cave, one of the largest known nursery sites for the Endangered gray bat, has just been purchased by the Missouri Department of Conservation. The \$37,800 purchase—financed entirely by the State—was made possible by a recent amendment to the State constitution in which Missourians voted additional tax revenue to bolster wildlife conservation.

Located on a 108-acre tract in Camden County, Moles Cave served as a maternity site for an estimated 40,000 female gray bats (*Myotis grisecens*) last summer. The area is among more than 20,000 acres of valuable wildlife habitat that have been acquired under Missouri's novel "Design for Conservation" program since July 1977, when the special one-eighth of one percent sales tax went into effect.

"Missourians did something unique at the polls and we want to plan very carefully for the future of their money," says Carl Noren, director of the Department of Conservation. As part of the planning process, the department conducted a series of public meetings to help set priorities for spending the anticipated \$21 million to be provided in the first full year of the tax. "Design" will focus on three major areas: conservation lands, public services, and management and research.

Acquisition has been given highest priority by the State, with 80 percent of the revenue already earmarked for land purchase. Conceived in 1970, the plan aims to improve the State's conservation program by making more public lands available to recreationists and sportsmen, improving wildlife management, and providing additional protection to Endangered species.

### Genesis of ES Program

The Missouri General Assembly in 1972 enacted a law directing the Department of Conservation to establish a list of animal and plant species considered to be endangered in the State, and provided statutory protection for them. Since then, the State has placed 138 animal species on its list (including federally listed species), and has designated a total of 365 plants as rare or endangered.

In 1976, Missouri signed a cooperative agreement with the Fish and Wildlife Service and became eligible to receive Federal grant-in-aid matching funds for endangered species conservation in the State.

Missouri's Endangered Species Program is administered through the Department's Natural History Section, the coordinating unit for nongame activities. The mission for this new section provides for the study, protection, interpretation, and enjoyment of native plants, animals, and their associated ecosystems.

The section is headed by John E. Wylie, natural history officer. The scientific staff includes the Endangered Species Program coordinator, a herpetologist, an ornithologist, an urban biologist, a naturalist program coordinator, and a natural areas coordinator.

According to Jim Henry Wilson, coordinator of the Endangered Species Program, "The Department of Conservation and the people of our State have historically attached great importance to endangered species. Many of our people have been quite active in endangered species protection, often



Missouri Department of Conservation photo

### Wood Frog

*The Missouri Department of Conservation has listed the wood frog (Rana sylvatica) as endangered because of its extreme rarity in the State. It is known from only a few localities and in low numbers. The frog is small to medium sized (adults*

*measure up to 2½ inches or 63 mm) and is tan or brown in color, with a distinct dark-brown "mask" behind the eyes. A solitary and rather secretive creature, the frog is found usually near woodland ponds, springs, and streams.*



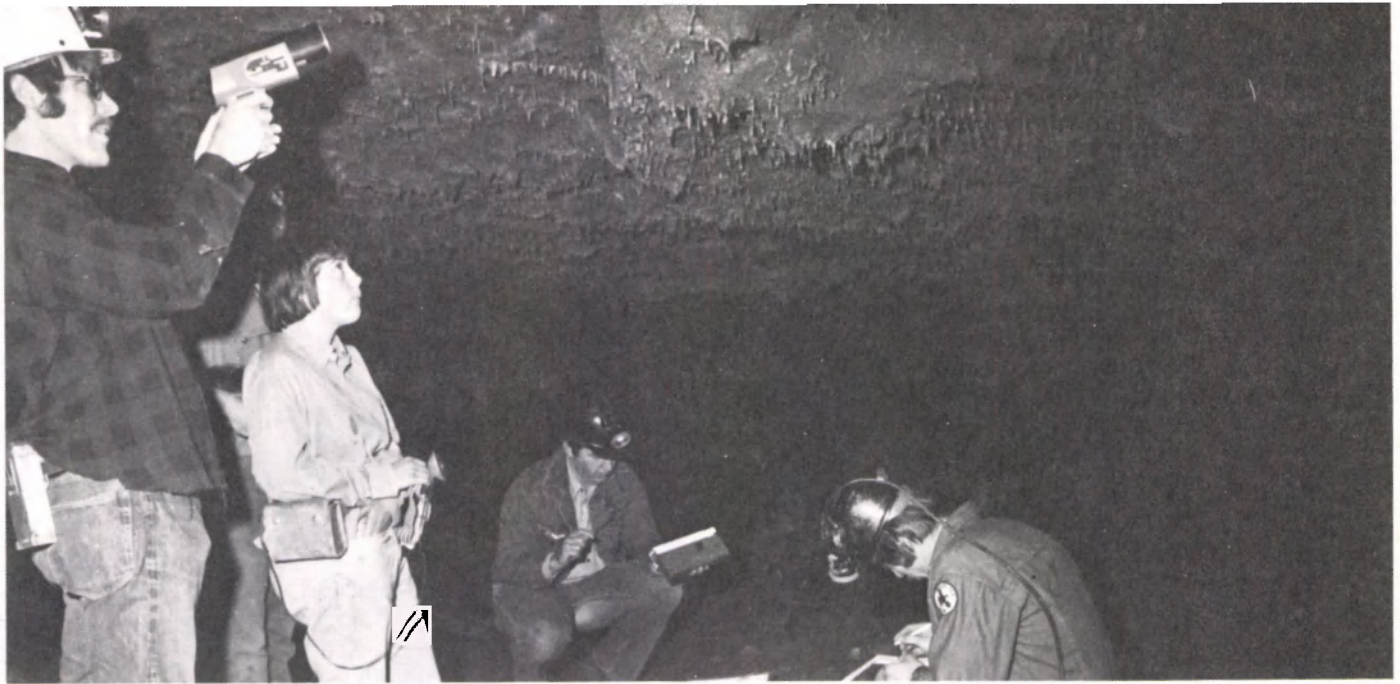


Photo by U.S. Army Corps of Engineers—St. Louis District

Indiana bat habitat in Missouri's Mud Cave is studied by Richard and Margaret LaVal, along with John Brady of the U.S. Army

Corps of Engineers and two coworkers. An infrared remote sensing thermometer is being used to record temperatures.

making time to become involved. Note that our State endangered species statute predates the national act.

"The Endangered Species Program is also an integral part of the 'Design' referendum and subsequent legislation. With this additional funding, we should be able to better coordinate our efforts on behalf of Missouri's endangered species. We are already taking a more active role in research and habitat acquisition."

In its land acquisition program, the National History Section has assigned top priority to Critical Habitats for federally listed Endangered species, with special attention also being given to purchasing habitat for State-listed species. The agency is purchasing some sites as natural areas, representing ecosystems not now in the State system, which will be completely protected. Urban Wild Areas—small tracts in or near cities or towns which provide nucleus habitat for urban birds and wildlife—are also being acquired. In addition, the section plans to establish ecological preserves to protect areas containing rookeries, denning sites, marshes, etc. with scientific or human interest values.

Grant-in-aid funds have been allocated by the Service to assist the federally Endangered Indiana bat (*Myotis sodalis*), the lake sturgeon (*Acipenser fulvescens*) and pallid sturgeon (*Scaphirhynchus albus*), which are both listed as endangered by the State, and for studies of the bobcat (*Lynx rufus*), which is under status review by the Service.

#### Indiana Bat Project

Recently, Missouri has emerged as one of the most important locations for the Indiana bat, with apparently one

of the more stable populations located in about six primary cave hibernacula. A 1975 census showed Missouri had an Indiana bat population estimated at 280,500.

Last year, Missouri launched a federally supported three-year study of the bat to collect information on its winter and summer distribution and abundance, to determine factors affecting its survival, and to eventually recommend programs to promote its continued survival in the State. An estimated \$137,000 in Federal matching funds has been allocated for the first two years of study, with the State scheduled to contribute about \$68,000 through fiscal year 1978.

Some of the funds will go toward the purchase of a cave and 272 acres of wooded land in Washington County, the hibernating site for an estimated 100,000 Indiana bats. The State plans to maintain the area, which has been designated by the Service as Critical Habitat for the bat, in its natural wild state. A gate will soon be placed across the mouth of the cave to allow the passage of bats and other small animals, and to act as a barrier to human intrusion, which could be disastrous to hibernating bats.

Habitat studies are being conducted by a husband-wife team of consultant scientists, Richard and Margaret LaVal. They are trapping and banding Indiana bats in their winter and summer locations, including the six winter hibernacula, to determine the bats' seasonal behavior and migration patterns. The bats' foraging habits are also being studied in hopes that mortality factors may be determined.

#### Sturgeon Studies

Lake sturgeon once were so plenti-

ful in the Missouri and Mississippi rivers they were fished commercially. State records show a harvest of 50,000 pounds in 1894. But the catch began plummeting five years later and by 1922 was down to only 4,200 pounds. Biologists attribute the decline to overfishing, but they point out that such manmade changes in the riverine habitat as the emplacement of locks and dams in the early 1900's, and subsequent channelization, may have eliminated or isolated the sturgeon's rearing and spawning areas.

The pallid sturgeon was not recognized as a subspecies until 1905, and scientists believe it probably never was abundant. The fish prefers a strong current over a firm, sandy bottom and, in years of high water, has been sighted in major tributary streams, such as the Kansas River. The last authenticated capture of a pallid sturgeon in Missouri was in 1948. It was taken by a fisherman from the Missouri River at Easley.

Several sites along the Mississippi and Missouri rivers are being checked in the studies now under way to determine the distribution of the two subspecies. At the same time, data are being gathered on the shovelnose sturgeon (*S. platyrhynchus*), a subspecies which is still being harvested commercially but has drastically declined in numbers and range. The annual catch of the shovelnose is now reported at about 4,000 pounds, compared with 150,530 pounds in 1899 (which may have included some pallid sturgeon).

Missouri officials expect the one-year study, to be completed this fall (with \$40,000 in Federal matching fund assistance), to yield data helpful in defining the status of the three

(continued on next page)



subspecies. The findings on shovel-nose sturgeon populations may also be used as a guide to protect certain key habitat areas, to implement protective harvest measures, if needed, and to determine additional research needs.

### **Bobcat Study**

The federally supported bobcat study has been prompted by indications that the Missouri population of the furbearer may be in jeopardy from overharvesting and a reduction in available habitat. The State has closed the 1977 and 1978 bobcat trapping seasons, because of a 12-fold increase in the number of bobcats harvested in the State since 1970—a result of soaring pelt prices. (In 1970, pelts brought an average of \$4 apiece and only 91 animals were reported taken; in 1976, when the average price had risen to \$46.50, the harvest jumped to 1,107 pelts.) In addition, only a small fraction of the once-plentiful Ozark hardwood forests remain, limiting the amount of available habitat for the species.

The one-year study, which will begin in June at a cost of \$8,960 (State and Federal funds) is intended to provide a clearer picture of the bobcat's range and relative abundance. It will be used in determining whether the State will allow harvesting to resume.

### **Nangua Darter**

Under contract with the Service, Missouri recently completed a three-year study of the *Nangua darter* (*Etheostoma nanguae*), a fish listed as rare in the State.

Eight populations of the subspecies were found occupying 128 miles of streams in the Ozark Uplands, which form the Osage River Basin. Through seining and direct observation, the darter's population was estimated at between 2,300 and 27,000 individuals, leading scientists to conclude that the fish is "rare, localized in occurrence, and vulnerable to extinction."

The State has submitted its study data to the Service, and proposed that the darter be federally listed for protection under the Endangered Species Act of 1973.

### **Mussel Survey**

Currently, the Department of Conservation is negotiating with the U.S. Army Corps of Engineers to conduct a study of mussel species in the Missouri part of the Meramec River Basin. The survey will concentrate on the status of federally listed mussels known to exist in the area (*Lampsilis higginsii*, *Cumberlandia monodonta*, *Cyprogenia aberti*, and *Leptodea leptodon*). Data also will be collected on all other mussel species found during the survey.



Photo by W. Pflieger

*Nangua darter* has been nominated for *Threatened* status by Missouri

### **Other State Studies**

The department has several other studies in progress or in the planning stage to learn the status of resident species. These include the blind cave crayfish (*Cambarus setosus* and *C. hubrichtii*), which are endemic to the Ozarks; the Illinois mud turtle (*Kinosternon flavescens spoonerii*), which was last reported from Missouri in 1956; and the canebrake rattlesnake (*Crotalus horridus atricaudatus*), which is already on the State's endangered list and appears to be declining.

### **Endangered Plants**

The Missouri Botanical Garden has been awarded a contract by the State's

Department of Conservation to conduct a study of rare and endangered plants of Missouri. Eight herbariums are included in the study: The Missouri Botanical Garden in St. Louis; the Field Museum, Chicago; New York Botanical Garden, Bronx, N.Y.; Gray Herbarium, Cambridge, Mass.; Smithsonian Institution, Washington, D.C.; herbariums of the University of Missouri at Columbia and Kansas City, and Southwest Missouri State University, Springfield.

It is estimated that as many as 2,500 collections of the species under study are in these herbariums. Each collection will be photographed and taxonomically cataloged, and the species will also be listed by the counties where they are found.

Washington University, St. Louis, currently is negotiating with the Department of Conservation to embark upon a two-year study of American ginseng (*Panax quinquefolium*) in Missouri, where the 1977 harvest of wild ginseng was reported at 6,100 pounds. Very little is known about the status of the plant in the State, and the study will attempt to produce an accurate estimate of the distribution and abundance of the species. Recommended management practices also will be developed for harvesting and conserving the species on private and State lands. The status of wild ginseng is now under review by the Service.

Missouri's list of protected plants and animals has been extensively revised. It now includes a county index and, in many cases, annotations on range and natural history. The booklet, "Rare and Endangered Species of Missouri," is available from the Missouri Department of Conservation, P.O. Box 180, Jefferson City, Missouri 65101.



Photo by Tom R. Johnson

Missouri's population of the canebrake rattlesnake is confined chiefly to Mingo National Wildlife Refuge in the southeastern corner of the State; elsewhere in the State the species is declining or extirpated.



## ENDANGERED SPECIES SCIENTIFIC AUTHORITY

Notices—April 1978

The Endangered Species Scientific Authority (ESSA) is responsible for the biological review of applications to import or export species listed in Appendix I, and to export species listed in Appendix II, of the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Notices of the ESSA's findings are published in the Federal Register. Summaries of these notices are reported in the BULLETIN by month of publication

### Export Quotas Set for Bobcat, River Otter, Lynx, Ginseng

ESSA has issued its findings for the 1977-78 season for the commercial international export of four species listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (F.R. 3/16/78).

The four species are the bobcat (*Lynx rufus*, excluding the Mexican bobcat, *L. r. escuinapae*), river otter (*Lutra canadensis*), lynx (*Lynx canadensis*), and American ginseng (*Panax quinquefolius*), all of which are also being considered currently by the Service for possible listing as either Endangered or Threatened under the Endangered Species Act of 1973.

Given the ESSA's mandate to determine whether or not export will be detrimental to the survival of Appendix II species, the findings reflect the best available data and are organized on a state-by-state basis. Biological, commercial, and legal classification of the four species varies among the states.

ESSA's findings were based on an evaluation of new data on populations and harvests received following publication of ESSA's preliminary findings in the August 30, 1977, *Federal Register* (see September 1977 BULLETIN). (A full discussion of the usefulness of various census techniques and total population estimates, as well as the consideration given to long-term harvest and habitat trends and State management practices, is provided in the *Federal Register* notice.)

### Bobcat and River Otter

Findings for the bobcat and river otter are summarized in the accompanying table (continued on next page)

## BOBCAT, RIVER OTTER: SUMMARY

State	Bobcat			River Otter		
	State Population	State Harvest 1976-77	State Quota 1977-78	State Population	State Harvest 1976-77	State Quota 1977-78
Ala.	60,000-110,000	3,951	4,000	(increasing)	1,072	1,500
Alaska	(not present in State)			(abundant)	2,700	(open)
Ariz. <sup>1</sup>	45,000	7,344	8,000	(State protected)		
Ark. <sup>2 10</sup>	37,000	2,733	3,000	6,900	363	400
Calif. <sup>2</sup>	(unestimated)	11,903-13,703	6,000	(State protected)		
Colo. <sup>2</sup>	41,850	3,044	4,000	(State protected but not present)		
Conn.	(State protected)			(increasing)	61	100
Del.	(not present in State)			(stable)	56	60
Fla.	(unestimated)	13,439	3,500	(abundant)	11,532	6,000
Ga. <sup>3</sup>	49,210	2,577	4,000	(increasing)	3,187	4,000
Hawaii	(not present in State)			(not present in State)		
Idaho <sup>2 4</sup>	9,000	964	1,475	(State protected; viable population)		
Ill.	(State protected)			(State protected)		
Ind.	(State protected)			(State protected but not present)		
Iowa	(State protected)			(rare)	(unknown)	0
Kans.	10,000-12,000	1,650	(none set)	(State protected)		
Ky.	(State protected)			(State protected but not present)		
La. <sup>4</sup>	33,459	2,997	4,000	30,000-60,000	11,900	7,500
Maine	2,543	436	500	5,258	898	600
Md.	(State protected; very rare)			(stable)	181	165
Mass.	800-1,000	14	50	(stable)	110	68
Mich. <sup>2</sup>	(unestimated)	341	(none set)	(increasing)	910	551
Minn. <sup>4 12</sup>	(unestimated)	175	150	2,150	2,664	700
		(1975)			(1976)	
Miss.	(increasing)	4,374	4,000	(increasing)	324	350
Mo.	(State protected)			(State protected)		
Mont.	(unestimated)	1,068	1,070	(stable)	48	36
Nebr.	(stable)	758	400	(State protected but not present)		
Nev.	8,899-17,798	1,345	2,225	500		0
		(1975)				
N.H. <sup>5</sup>	(State protected)			(increasing)	205	200
N.J.	(State protected)			(State protected)		
N. Mex.	13,107-49,135	5,207	6,000	(State protected)		
N.Y. <sup>2 4 13</sup>	966-1,933	161	225	1,468 +	633	700
		(1973)				
N.C. <sup>4</sup>	8,000	1,101	800	(stable)	1,390	1,200
N. Dak.	(unestimated)	75	165	(not present in State)		
		(1976)				
Ohio	(State protected)			(State protected)		
Okla. <sup>11</sup>	(unestimated)	3,548	0	(State protected)		
Oreg. <sup>2</sup>	(unestimated)	4,002	3,000	(doing well)	435	335
Pa.	(State protected)			(State protected)		
R.I. <sup>6</sup>	(State protected; uncommon)			(very viable)	34	15
S.C. <sup>2 11</sup>	(stable)	1,368	0	(unestimated)	1,351	650
S. Dak. <sup>2</sup>	2,500-4,000	418	500	(State protected; presence uncertain)		
Tenn.	7,000-12,000	1,428	1,000	(State protected)		
Tex. <sup>7 11</sup>	115,000-278,000	16,049	10,000	2,183	145	0
Utah <sup>8</sup>	7,872	(State protected)		(State protected)		
Vt.	(unestimated)	84	200	(increasing)	45	50
Va.	12,000	1,440	1,500	(increasing)	776	585
Wash. <sup>4</sup>	(unestimated)	6,050	6,000	(increasing)	1,290	770
W. Va. <sup>2</sup>	4,400	443	500	(State protected but not present)		
Wis.	1,500-2,000	223	300	(stable)	853	1,200
		(1975)			(1975)	
Wyo.	7,000-10,000	4,737	2,000	(State protected)		
Navajo Nation <sup>9</sup>	(unestimated)	113	500	(not present)		

<sup>1</sup> Indian reservations in Arizona not subject to State regulations.

<sup>2</sup> Bobcat habitat: Much closed or inaccessible land in State.

<sup>3</sup> High unreported harvest of both bobcat and river otter in Georgia.

<sup>4</sup> River otter habitat: Much closed or inaccessible land in State.

<sup>5</sup> Two-year moratorium on bobcat in New Hampshire; opening possible for 1979.

<sup>6</sup> River otter season closed in Rhode Island, 1970-75.

<sup>7</sup> River otter season closed in Texas, 1927-50.

<sup>8</sup> Bobcat season in Utah closed 1977-80 by Agriculture Damage Control Board.

<sup>9</sup> Navajo Nation not under jurisdiction of 3 States containing reservation.

<sup>10</sup> Quotas set since *Federal Register* publication.

<sup>11</sup> States requested "zero" quota, where noted.

<sup>12</sup> Minnesota otter population estimate in *Federal Register* was incomplete, represents minimum breeding population.

<sup>13</sup> New York otter estimate does not include untagged part of population.



nying table, which shows population, harvest, and ESSA-set export quota by state for each species (full details and comments are given in the *Federal Register* notice).

### Lynx

Only five states have an open season for lynx, and 1977-78 export quotas have been set for each of these states as follows:

- **Alaska:** Trapping highly localized and trapping pressure decreasing on statewide basis. Quota: Open.
- **Idaho:** Breeding population mostly in inaccessible areas north of Salmon River. One-month season; only small numbers taken. Quota: 25.
- **Minnesota:** Small breeding population in north, with influx from Canada in peak years accompanied by increased take. Two-month season and bag limit of five. Quota: 25.
- **Montana:** Population increasing, with major breeding population in inaccessible northern areas. Three-month season and bag limit of two. Quota: 200.
- **Washington:** Population mostly in park or wilderness areas; little trapping pressure. Quota: 35.

The following states officially protect the lynx, although not all of them have resident populations: Colorado,

Connecticut, Maine, Michigan, New Hampshire, Utah, Vermont, Wisconsin, and Wyoming.

Because the lynx undergoes great population changes every ten years or so, and because the five open-season states experience an influx of lynx from Canada in high-population years, no attempt has been made to determine population numbers on a state-by-state basis.

### ESSA Schedules Public Hearing

An informal hearing will be conducted by the Endangered Species Scientific Authority (ESSA) concerning information required by the agency for its export findings on the 1978-79 harvest of bobcat, lynx, and river otter, and the 1978 harvest of the American ginseng plant.

The hearing is scheduled for 9:30 am, May 1, at the Main Auditorium, Main Interior Building, 18th and D Streets, Washington, D.C. Persons wishing to make statements relevant to ESSA's findings on the four species should contact the Office of the Executive Secretary, ESSA, for an appointment to speak at the hearing.

### American Ginseng

The ESSA has left its original finding (F.R. 8/30/77) unchanged; that is, it will allow export only of ginseng roots that have been collected in Michigan, that being the only state that maintains a regulatory program to prevent exploitation. Furthermore, the ESSA states that it will allow such export only for ginseng collected during the 1977 season, and that a notice is currently in preparation for the 1978 collecting season.

### ES Violators Convicted In New Mexico and Kentucky

Investigations by the Service's Division of Law Enforcement have led to convictions in two cases involving endangered species.

On February 27, Thurman Wit of Albuquerque, New Mexico, was sentenced on two counts of having violated the Endangered Species Act of 1973 by attempting to shoot two whooping cranes north of the Bosque del Apache National Wildlife Refuge.

Apprehended by Division special agents in November and convicted in January, Wit was sentenced on the first count to six months in jail, of which he must serve 30 days, plus three years of supervised probation. On the second count, he was given three years of supervised probation (to run concurrently with the count one probation). In addition, he was forbidden to hunt or even carry firearms for three years.

Also on February 27, Ronnie Dale Nanney of Hardin, Kentucky, was sentenced on one count of having violated the Bald Eagle Protection Act by shooting an immature bald eagle. In passing sentence, Judge Edward J. Johnstone emphasized the seriousness of Nanney's offense and the importance of protecting the Nation's wildlife.

Accordingly, Nanney was sentenced to one year in jail (suspended); active probation for three years, during which time he will not be permitted to hunt and will have to work on a conservation project for 80 days; forfeiture of his rifle; and a fine of \$2,500, which is believed to be the most severe ever imposed in a bald eagle violation case.

The Service believes that the Bulle-  
gative success of the Division of Law Enforcement and the response of the Federal court system (Nanney was sentenced only two months for the shooting) will help provide a deterrent to would-be violators. (See law enforcement report, December 1977 BULLETIN.)



An otter at Wishkah River, Washington

U.S. Fish and Wildlife Service photo by V. B. Scheffer



## Rulemaking Actions — March 1978

### New Rule Proposed For Changing Lists of Convention Species

The Service has proposed a formal procedure—including public participation—to be used by the United States in seeking amendments to the lists of wildlife and plants protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

The proposed procedure (F.R. 3/24/78) would supplement the final rulemaking issued by the Service on February 22, 1977, which implemented the Convention by the United States. In that ruling no regulatory mechanism was established for making changes in Appendixes I, II, and III to the Convention, which list protected species.

Under the terms of the Convention only the 44 party nations can propose amendments to the appendixes. Adoption of an amendment requires a two-thirds majority of the parties voting, either at a general meeting of Convention nations or by a mail procedure described in the Convention text.

The original lists were negotiated along with the treaty in 1973. They have

been amended once—at the last full meeting of Convention nations in 1976. The next full meeting is scheduled to be held next year.

#### Petition Process

In the proposed procedure, the Service says that it would accept petitions for the review of the status of any species at any time from interested members of the public. These petitions may seek to add or delete a species, or move a species from one appendix to another. Certain information would be required.

The petitions must be accompanied by supporting biological data on the species in question, including past and present geographic distribution, population estimates and trends and habitat trends. In addition, the petitions must contain trade data—including both legal and illegal commerce and the potential threats they pose to the species; the protection status of the species under national and international regulations and the need for addi-

tional safeguards; information on species of similar appearance; comments on the status and protection needs of the species from authorities in other countries, if the species occurs elsewhere other than in the United States.

#### Comment Period

If the Service finds that the evidence presented warrants a review, a notice to that effect would be published in the *Federal Register* inviting the public to comment and submit additional information. Following the receipt of comments, the Service would make a determination regarding the petition, which also would be published in the *Federal Register*.

If a petition is accepted, it would be forwarded to the Secretariat of the Convention as an official United States proposal to amend the appendixes. A third notice would be published in the *Federal Register* stating the outcome of the action taken by party nations on the petition and giving the effective amendment date, if approved.

Proposed amendments by other party nations also would be subjected to the same review and public comment procedure to help determine the U.S. position on whether to accept or reject them.

Comments on the proposed procedure should be submitted to the director of the U.S. Fish and Wildlife Service by May 23, 1978.

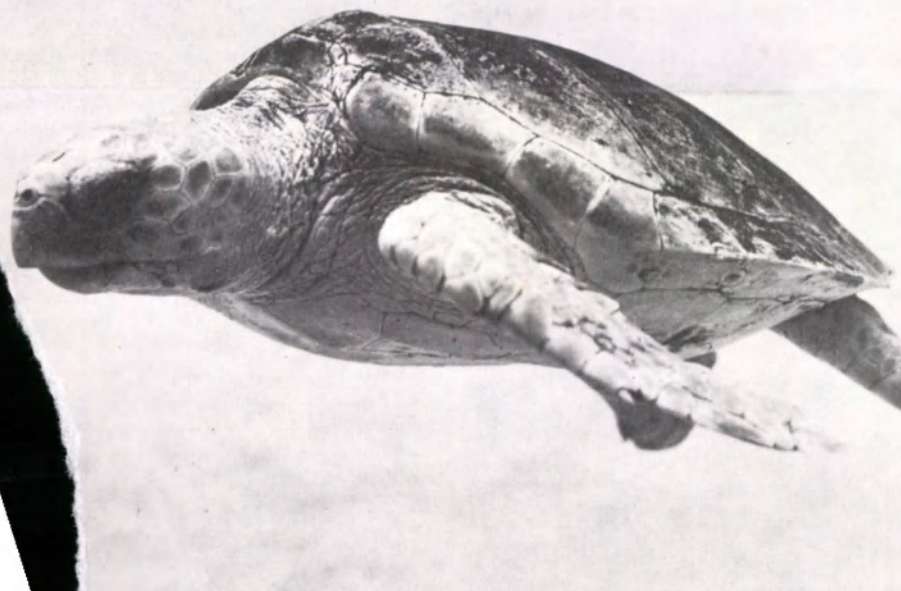
#### Comment Period Reopened On Sea Turtle Proposal

The Fish and Wildlife Service and the National Marine Fisheries Service (NMFS) have announced that the period for public comment on an inter-agency proposal to list three sea turtles as Threatened and to establish protective regulations for the species will be reopened for 21 days (F.R. 3/27/78).

The three species are the green (*Chelonia mydas*), loggerhead (*Caretta caretta*), and Pacific ridley (*Lepidochelys olivacea*) sea turtles. The proposed regulations—developed pursuant to section 4(d) of the Endangered Species Act of 1973—were proposed jointly by the NMFS (which is under the Department of Commerce) and the U.S. Fish and Wildlife Service.

Reopening the public comment period was requested by the Environ-

(continued on next page)



U.S. Fish and Wildlife Service photo by Rex Gary Schmidt

ence is being weighed in connection with a proposal to list the loggerhead and two other sea turtles as Threatened.



mental Defense Fund, which argued that more time was needed to submit newly acquired evidence, including affidavits from recognized scientific experts on the sea turtle. The Fund pointed out that the original comment period (following public hearings) had been closed since April 5, 1976, and that consideration of the new evidence was necessary to ensure compliance with the statutory requirement that all listings be made on the basis of the best available scientific and commercial data.

Comments should be submitted, by no later than April 17, to the Acting Assistant Administrator for Fisheries, National Marine Fisheries Service, NOAA, U.S. Department of Commerce, Washington, D.C. 20235.

### Leatherback Sea Turtle

Discovery of a leatherback sea turtle (*Dermochelys coriacea*) nesting area in the U.S. Virgin Islands has led the Service to propose the area as Critical Habitat for this Endangered species (F.R. 3/23/78).

The nesting area, a narrow strip of land at Sandy Point Beach, at the western end of the island of St. Croix, constitutes the only known beach under U.S. jurisdiction used extensively for nesting by the leatherback.

A field visit to the site in June 1977 by Service personnel and other U.S. Government officials revealed a total of 76-79 leatherback nests. The visitors also noted evidence in the nesting area of poaching, sand mining, and potential industrial development.

Given that the leatherback is a rare reptile, listed as Endangered since 1970, the Service believes that much of



U.S. Fish and Wildlife Service photo

This stretch of Sandy Point Beach at the western end of St. Croix has been proposed as Critical Habitat for the leatherback, the sea turtle's only known nesting area under U.S. jurisdiction.

the hope for the survival and recovery of the species depends upon the maintenance of suitable and undisturbed nesting areas, such as that at Sandy Point Beach.

Comments from the public should be submitted to the Service by May 22. Comments from the Governor of the U.S. Virgin Islands are due by June 21.

### Socorro Isopod

A final rulemaking issued by the Service determines the Socorro isopod (*Exophaeroma thermophilus*) to be Endangered (F.R. 3/27/78).

The species, which occurs only in the Socorro thermal area of central New Mexico, now numbers less than 2,500 individuals. Although human activities have rendered the isopod's natural habitat unusable, the species has managed to survive in an artificial environment—the partially open conduit system of an old bathhouse.

The final ruling, effective April 26, is intended to provide the isopod with needed protection in its present habitat. Such protection, the Service believes, could possibly lead to the eventual reestablishment of the species elsewhere.

The Service's original proposal to list the Socorro isopod was published in the *Federal Register* on December 30, 1977 (see January 1978, TIN). Subsequently, the Governor of New Mexico announced that he supported the proposal. No other comments, from either the general public or the scientific community, have been received by the Service. The final rule, therefore, is the same as the proposal.



New Mexico Department of Game & Fish photo by Mike Hatch

The Socorro isopod lives in an open conduit that feeds thermal water past the old bathhouse (at left) into the swimming pool.



## **Wolf** (continued from page 1)

Among private organizations, the National Audubon Society, the National Wildlife Federation, and the Wildlife Management Institute wrote in favor of the proposal, and the Environmental Defense Fund "cautiously" supported it. The North American Wolf Society was also positive, but questioned the elimination of subspecific listings on the grounds that this could jeopardize efforts to locate and maintain stocks of the various subspecies.

A number of private organizations opposed the proposal. Some, such as the Safari Club International, were against any listing or Critical Habitat designation for wolves in Minnesota. Others, such as the Defenders of Wildlife, Sierra Club, Wilderness Society, and Fund for Animals, objected to anything less than full Endangered status for all wolves in the conterminous United States.

Including petition signatures and form letters, more than 1,000 private citizens supported Endangered status for the Minnesota wolves; 336 supported total declassification in Minnesota; 313 expressed opposition to what they mistakenly termed a wolf "sanctuary" in Minnesota; and 129 suggested that the proposed depredation-control measures were inadequate.

## **Conclusions**

After carefully reviewing all the comments and analyzing the evidence, the Service has determined that the final

rulemaking should be substantially the same as the June 9, 1977, proposal. The only difference is that the final ruling makes some minor modifications in the boundaries of regulatory zones 1, 2, and 4 in the northeastern portion of the State.

In zone 1, which includes most of Superior National Forest, wolves are completely protected. Taking of wolves by authorized Federal and State agents is permitted in the other four zones under special rules covering predator control. But the Service said zones 2 and 3 have practically no livestock; consequently, few, if any, wolves will be taken there.

Therefore, it is expected that most wolves will be taken in zone 4 under depredation-control measures. While the wolf population in this zone might be held below its biological potential, it is expected to continue to exist in reasonable numbers. The Service said these controls will reduce conflicts with human interests and "should create a more favorable public attitude that would be of overall benefit to the wolf."

The Service concluded that the depredation-control measures "are all that can be supported on the basis of currently available data" but that the situation "will be closely monitored."

With regard to subspecies, the Service stated that it will "continue to recognize valid biological subspecies for purposes of its research and conservation programs."

## **FWS Extends Comment Period on Fish Listing**

Public interest in a proposed rulemaking to list five small southern fishes as Endangered has prompted the Service to extend the deadline for public comments from February 28 to May 30 (F.R. 3/30/78).

The proposal, published in the *Federal Register* on December 30, 1977 (see January 1978 BULLETIN), recommended Endangered status for the Waccamaw darter (*Etheostoma perlongum*), Waccamaw killifish (*Fundulus waccamensis*), and Waccamaw silverside (*Menidia extensa*), found in North Carolina; the Barrens topminnow (*Fundulus* sp.), found in Tennessee; and the Ouachita madtom (*Noturus lachneri*), found in Arkansas.

can Birds classified the Mexican duck a subspecies, *Anas platyrhynchos diazi*, of the common mallard. This classification was restricted to the pure population of the duck in central Mexico. The Mexican-like ducks indigenous to the Southwestern United States and also northern Mexico were classified as intergrades (*Anas platyrhynchos platyrhynchos* x *diazi*) with the mallard.

## **Conclusion**

In summary, the Service said, "The population of Mexican-like ducks in the U.S. consists of intergrades between Mexican ducks and mallards. Population surveys in the United States and Mexico during the past 10-15 years show a relatively stable population of Mexican and Mexican-like ducks. Evidence suggests there is not any present or threatened jeopardy to the continued existence of the Mexican duck in any portion of its range. The Service finds no justification for the classification as Endangered or Threatened for one parental subspecies in a population that is composed of a freely interbreeding population of that subspecies and another conspecific subspecies."

Comments from the public on the delisting proposal must be submitted to the Service by May 30, 1978.

## **Reference Note**

All Service notices and proposed and final rulemakings are published in the *Federal Register* in full detail. The parenthetical references given in the BULLETIN—for example, (F.R. 4/22/78)—list the month, day, and year that the notice or rulemaking was published in the *Federal Register*.

## **Duck** (continued from page 1)

### **Status Review**

But information received from the Service's status review, which was announced last November (see the December 1977 BULLETIN), and other data acquired over the past two years show that while there has been a reduction of wetlands, the Mexican duck is highly adaptable. It has moved out of the river bottoms and colonized small irrigation impoundments and croplands, and can be found from humid pine-oak mountains to arid mesquite grasslands. Moreover, since the 1930's, the duck has expanded its range westward into Arizona and eastward into Texas.

The population of Mexican-like ducks apparently never has been large because of a general lack of water in the Southwestern United States and has remained stable in modern times. The present estimate of these ducks nesting in the United States is 1,000, with perhaps as many as 2,000 in the northern Mexico states of Durango and Chihuahua.

Special attention was accorded the Mexican duck in the 1978 winter water-

fowl survey conducted by the Service in January. The survey yielded a count of 22,470 Mexican and Mexican-like ducks in Mexico, and this is regarded as a conservative estimate of the actual total. A count of 545 Mexican-like ducks was made in southeastern Arizona, southern New Mexico, and western Texas. These tallies are consistent with surveys taken since the early 1960's.

Limited banding of Mexican-like ducks in Arizona, New Mexico, and Texas and field observations indicate they are largely non-migratory, although there are seasonal movements related to local changes in water and food availability. The Mexican duck is reported to be very wary by nature and usually remains widely dispersed in pairs from other ducks. These factors, the Service said, seem to preclude any large-scale harvest of the species, and no evidence was found of overutilization for commercial, sporting, or other purposes.

In January, the American Ornithologist's Union Committee on Classification and Nomenclature of North Ameri-



## Pending Rulemakings

The Service expects to issue rulemakings and notices of review on the subjects listed below during the next 90 days. The status or action being considered for each final and proposed rulemaking is given in parentheses.

The decision on each final rulemaking will depend upon completion of the analysis of comments received and/or new data made available, with the understanding that such analysis may result in modification of the content or timing of the original proposal, or the rendering of a negative decision.

### Pending Final Rulemakings

- 6 butterflies (C.H.)
- Contra Costa wallflower and Antioch Dunes evening primrose (C.H.)
- 13 plants (E, T)
- Grizzly bear (C.H.)
- 15 crustaceans (E, T)
- Whooping crane (C.H.)
- Black toad (T, C.H.)
- New Mexican ridge-nosed rattlesnake (T, C.H.)
- 2 zebras (E)
- 7 Eastern land snails (E, T)
- 12 Western snails (T)
- African elephant (T)
- 2 big-eared bats (E)

### Pending Proposed Rulemakings

- 10 North American beetles (E, T)
- 2 harvestmen (E, T)
- 3 mussels (C.H.)
- Rocky Mountain peregrine falcon population (C.H.)
- Colorado squawfish (C.H.)
- Virgin River chub (E, C.H.)
- 2 Hawaiian cave invertebrates (E, T)
- Desert Tortoise (Beaver Dam slope population) (E, C.H.)
- Deregulation of Tecopa pupfish
- Unarmored threespined stickleback (C.H.)
- Puerto Rican whip-poor-will (C.H.)
- Laysan duck (C.H.)
- Bonytail chub (E)
- Razorback sucker (T)

## BOX SCORE OF SPECIES LISTINGS

Category	Number of Endangered Species			Number of Threatened Species		
	U.S.	Foreign	Total	U.S.	Foreign	Total
<b>Mammals</b> .....	33	227	260	3	17	20
<b>Birds</b> .....	68	144	212	3		3
<b>Reptiles</b> .....	10	46	56	6		6
<b>Amphibians</b> .....	5	9	14	2		2
<b>Fishes</b> .....	30	10	40	10		10
<b>Snails</b> .....		1	1			
<b>Clams</b> .....	23	2	25			
<b>Crustaceans</b> .....	1		1			
<b>Insects</b> .....	6		6	2		2
<b>Plants</b> .....	4		4			
<b>Total</b> .....	180	439	619	26	17	43

Number of species currently proposed: 107 animals  
1,867 plants (approx.)

Number of Critical Habitats proposed: 40

Number of Critical Habitats listed: 26

Number of Recovery Teams appointed: 59

Number of Recovery Plans approved: 16

Number of Cooperative Agreements signed with States: 21

March 31, 1978

- West African manatee (T)
- 20 Appendix I spp.
- Cui-ui (C.H.)
- Whooping crane (C.H.—additional areas)
- Illinois mud turtle (E, C.H.)
- Key mud turtle (E, C.H.)
- Plymouth red-bellied turtle (E, C.H.)
- 5 Ash Meadow plants (C.H.)
- 7 Oregon freshwater fishes (E, T)
- 24 foreign mammals and 1 bird (E)
- Light-footed clapper rail and California least tern (C.H.)
- Yellow-shouldered blackbird (C.H.)
- Santa Cruz long-toed salamander (C.H.)
- Hawksbill sea turtle (C.H.)
- 2 Virginia fishes (T, C.H.)
- Maryland darter (C.H.)
- 4 Texas/New Mexico fishes (E, T, C.H.)

### Pending Notice of Review

- Rhesus monkey in Bangladesh

Abbreviations: E=Endangered, T=Threatened,  
C.H.=Critical Habitat

## Wildlife Law Conference

The Environmental Law Institute, in cooperation with the Smithsonian Institution, is conducting a conference on "Wildlife Law and Policy" May 22-23 at the Baird Auditorium, National Museum of Natural History, Washington, D.C.

The conference will reexamine major policy issues in relation to the Endangered Species Act of 1973, the Marine Mammal Protection Act, and other statutes bearing upon wildlife management and protection. These issues include the regulation of commerce in wildlife, acquisition of habitat, the indirect protection of wildlife and habitat, and law enforcement. The registration fee is \$185.00. For more information, contact the Environmental Law Institute, 1346 Connecticut Ave., N.W., Washington, D.C. 20036.



## ENDANGERED SPECIES TECHNICAL BULLETIN

Department of the Interior • U.S. Fish and Wildlife Service • Endangered Species Program, Washington, D.C. 20240

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